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Notice of Allowability	Application No.	Applicant(s)	
	10/070,507	HAKUTA ET AL.	
	Examiner	Art Unit	
	Marc S. Zimmer	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 01/05/06 and the interview conducted 03/07/06.
2. ☒ The allowed claim(s) is/are 1,3-27 and 91-104.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>01/13/06,02/15/06</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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MARC S. ZIMMER
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with George Lesmes on March 7, 2006.

The application has been amended as follows:

Please cancel claims 28-52 and 65-88.

Please replace the original abstract with the following:

The curable composition of the present invention contains (A1) a silyl-containing ethylene/ α -olefin/non-conjugated polyene random copolymer rubber which has a structural unit derived from a norbornene compound as the non-conjugated polyene with at least one specific vinyl group at the terminal and contains a specific hydrolyzable silyl group, and (B) a compound, other than the rubber (A1), having a hydroxyl group and/or a hydrolyzable group, e.g., (B1) a compound having a silanol group and/or a compound which can react with moisture to form a compound having a silanol group in the molecule. This compound improves elongation of the cured product and residual surface tackiness, and, at the same time, is high in curing speed and capable of giving the cured product of high resistance to weather. It is suitable for, e.g., adhesives,

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tackifiers, paints, sealants, waterproof materials, spray materials, shaping materials and casting rubber materials.

Applicant had been advised that, in the Examiner's estimation, the claims being presently considered on their merits were now in condition for allowance. Authorization to cancel the remaining non-elected claims was granted by Applicant.

The abstract was amended only to convert it from two paragraphs to one as is required by the rules.

Allowable Subject Matter

In their reply, Applicant attempts to distinguish the claimed polymer material recited by each of claims 1, 3-27, and 91-104 from the polymer taught by the prior art on the following grounds:

"The silyl group-containing norbornene compound has only one C=C double bond in the molecule. Also, the olefin monomers have only one C=C double bond in the molecule. therefore, in the copolymers of JP '684, only the non-conjugated diene is a monomer capable of having a branched structure."

"... in the present invention, an ethylene/ α -olefin/non-conjugated polyene random copolymer having a branched structure formed on the non-conjugated polyene represented by formula (I) or (II), is obtained by copolymerization. Then, the silyl-containing ethylene/ α -olefin/non-conjugated polyene random copolymer rubber (A1) having the branched structure is prepared by hydrosilylation... "

It is not entirely clear to the Examiner what precisely that Applicant is trying to conceptualize with these statements although it is believed that they are trying to emphasize that, if hydrosilylation of the non-conjugated diene is carried out first and addition of the hydrosilylating compound occurs entirely at the terminal C=C double bond, then only one double bond, the ring double bond, remains for polymerization and, thus, the polymer is one where all repeat units derived from the non-conjugated diene contain ring carbon atoms in the backbone. (By contrast, if both alkenyl moieties of the non-conjugated diene were available for polymerization, some of the repeat units derived therefrom would feature ring carbons in the backbone whereas others would feature the carbon atoms of the terminal alkenyl moiety in the backbone. In the latter instance, the repeat unit features the ring structure pendant to the polymer backbone and it is this type of repeat unit that the Examiner believes Applicant might be referring to when characterizing the structure as branched. Of course, the bonding environment of the silane is dictated by which double bond is integrated into the polymer backbone in the approach contemplated by Applicant.) The Examiner is uncertain as to whether or not this had been what Applicant was attempting to articulate. In any case, the Examiner does view this as one distinction between the claimed polymer and that of the prior art.

Applicant also points to the following teachings of the reference as they pertain to other differences between the claimed polymer and prior art polymer:

“In addition, in JP '684, after copolymerizing at least two types of mono-olefin type monomers, a non-conjugated diene, and a silyl group-containing norbornene compound, the resultant copolymer is reacted with a compound represented by formula (III) and/or (IV), i.e., the copolymer is modified with the compound (III) and/or (IV). The compound (III) and/or (IV) is added in excess to not only terminate the polymerization reaction but also to react with the silyl groups introduced in the copolymer; note page 11, paragraph (0012). . . .”

The Examiner has reviewed the teachings of the reference and concedes that the subsequent modification of the silane-derivatized copolymer with a phenol, alcohol, or alkali metal salt of a phenol or alcohol compound is contemplated both by the broader disclosure and the Examples. Nevertheless, this reaction merely replaces the silicon-bound chlorine atom with either a phenoxide or alkoxide moiety. Amine is added when the modifying compound is phenol or alcohol to neutralize the hydrochloride gas that is formed as a by-product. Applicant's claims permit that the variable “X” may correspond to an alkoxy group and so the Examiner does not view this teaching as a distinguishing factor.

Nevertheless, the Examiner has already agreed that copolymer taught by the prior art is different at least insofar as there are potentially two different types of repeat unit derived from the unconjugated polyene.

The Examiner has reviewed the documents furnished by Applicant with their Information Disclosure Statements filed 01/13/06 and 02/15/06. One of these references is germane only insofar as it discloses the preparation of polymers identical

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to those presently claimed. However, the entire document is devoted to the preparation only of this class of polymer compounds. That is to say, there is no mention of any compositions containing said compounds or other materials that are to be added to said compounds. The other documents are related to similar copolymers that, unlike those of the instant invention are not silane-derivatized. These documents teach the incorporation of crosslinking compounds containing at least two SiH groups per molecule.

The prior art of record represents the most relevant teachings known. Because they fail to even render obvious the instant invention, claims 1, 3-27, and 91-104 are deemed allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 7, 2006


MARC S. ZIMMER
PRIMARY EXAMINER